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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,556	08/28/2001	Hyun-Don Oh	SEC.836	3479

7590 02/18/2004

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EXAMINER	
GEYER, SCOTT B	

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/939,556	OH ET AL.	
	Examiner	Art Unit	
	Scott B. Geyer	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 6-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-14 and 16-20* is/are rejected.

7)☒ Claim(s) *15 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *28 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4 and 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasebe et al. (5,826,129).

2A. As to ***claim 1***, Hasebe et al. teach a semiconductor fabricating apparatus which has an adhesion unit and a bake unit (see figure 4). The adhesion unit has a chamber (figure 22, numeral 328a) to introduce (i.e. supply) an adhesion enhancing material, namely HMDS. The bake unit is installed at a position higher than the adhesion unit, as is seen in figure 4. The semiconductor fabricating apparatus also has means by which clean air is blown downward from the bake unit to the adhesion unit, as can be seen in figures 5 and 6. The adhesion unit is installed on a base body as seen in figure 4.

2B. As to ***claim 4***, Hasebe et al. teach a semiconductor fabricating apparatus which has an adhesion unit and a bake unit (see figure 4). The adhesion unit has a chamber (figure 22, numeral 328a) to introduce (i.e. supply) an adhesion enhancing material, namely HMDS. The adhesion unit is installed at a first position and the bake unit is installed at a second position, as is seen in figure 4. The semiconductor fabricating apparatus also has means by which clean air is blown downward from the

bake unit to the adhesion unit, as can be seen in figures 5 and 6. The adhesion unit is installed on a base body as seen in figure 4.

2C. As to ***claim 7***, Hasebe et al. teach the bake unit (second position) is installed at a position higher than the adhesion unit (first position), as is seen in figure 4.

2D. As to ***claim 8***, Hasebe et al. teach a semiconductor fabricating method which has an adhesion unit and a bake unit (see figure 4), wherein a wafer first is treated in an adhesion unit (AD) (see figure 4) which uses HMDS and then the wafer is treated by heating in a bake unit (POBAKE). The semiconductor fabricating method also has clean air which is blown downward from the bake unit to the adhesion unit, as can be seen in figures 5 and 6. The adhesion step is performed before the bake step. The adhesion unit is installed on a base body as seen in figure 4.

2E. As to ***claim 9***, Hasebe et al. teach the adhesion unit has a chamber (figure 22, numeral 328a) to introduce (i.e. supply) an adhesion enhancing material, namely HMDS. The second step, in the bake unit, is baking.

2F. As to ***claim 11***, Hasebe et al. teach the bake unit (second position) is installed at a position higher than the adhesion unit (first position), as is seen in figure 4.

2G. As to ***claim 12***, Hasebe et al. teach a second process, of baking, performed after a first step, of processing in the adhesion unit.

2H. As to ***claim 13***, Hasebe et al. teach a semiconductor fabricating apparatus which has an adhesion unit and a bake unit (see figure 4), i.e. first and second fabricating units. The adhesion unit has a chamber (figure 22, numeral 328a) to introduce (i.e. supply) an adhesion enhancing material, namely HMDS, which generates

a process deteriorating gas (ammonia). The bake unit is installed at a position higher than the adhesion unit, as is seen in figure 4. The semiconductor fabricating apparatus also has means by which clean air is blown downward from the bake unit to the adhesion unit, as can be seen in figures 5 and 6, such that the air flows over the first and second units which carries the process deteriorating gas away.

2I. As to ***claim 14***, Hasebe et al. teach second units installed higher than the adhesion unit. The clean air flows downward, as indicated for claim 13 above.

2J. As to ***claim 16***, Hasebe t al. teach the second units being susceptible to ammonia, as indicated for claims 1, 4, 8 and 13 above.

2K. As to ***claim 17***, Hasebe et al. teach second units comprising bake and cooling units, as can be clearly seen by figure 4.

2L. As to ***claim 18***, Hasebe et al. teach the adhesion unit being installed on a base body, as can be seen clearly in figure 4. Clean air flows as indicated for claim 13 above.

2M. As to ***claim 19***, Hasebe et al. teach the adhesion unit installed on a base body as can be clearly seen in figure 4.

2N. As to ***claim 20***, Hasebe et al. teach a cooling unit installed in the production apparatus, as seen in figure 4. A cooling unit is installed at a higher level than the adhesion unit as seen in figure 4. Clean air flows as indicated for claim 1 above.

/

3. Claims 3, 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasebe et al. (5,826,129), as evidenced by the applicant's admitted prior art.

Hasebe et al. teach HMDS used in the adhesion unit of the semiconductor manufacturing method/apparatus (column 12, line 65); applicant has acquiesced that ammonia is generated by use of HMDS in an adhesion unit of a semiconductor manufacturing method/apparatus.

Allowable Subject Matter

4. Claims 15 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding:

All the second semiconductor processing units installed at a lower level than the adhesion unit, and clean air flows upward over the first and second process units, as recited in claim 15.

A cooling unit installed at a third position and the clean air flows from the third position to the first position where the adhesion unit is located, such that the process deteriorating gas is carried away from the cooling unit, as recited in claim 21.

Response to Arguments

5. Applicant's arguments filed 2-2-04 have been fully considered but they are not persuasive.

Applicant has amended claims 1, 4 and 8 to include the limitation that the adhesion unit is installed on a "base body", which applicant argues is not disclosed by Hasebe et al. However, the examiner disagrees with this assertion. As is gleaned from

applicant's disclosure and accompanying drawings, the examiner interprets a "base body" as the structural base of the apparatus which is processing the devices. This can especially be appreciated by applicant's figure 3, wherein the base body is the supporting structural element of the overall machine. Turning to Hasebe et al., the examiner clearly finds that the rectangular section of figure 4 (which unfortunately does not have a reference numeral assigned...the rectangular section in question is located directly beneath the multiple named elements of the machine) is the same "base body" as that claimed by the applicant. All of the named elements ("POBAKE", PREBAKE", "COL, "AD", "EXT", etc...) are located on this "base body", and are supported by the "base body". In other words, the "base body" of both the applicant's claims and Hasebe et al. is simply the structural feature of the machine which is between the machine's functional parts and the manufacturing room floor, and all of the machine parts are on the "base body".

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott B. Geyer whose telephone number is (571) 272-1958. The examiner can normally be reached on weekdays, between 10:00am - 6:30pm. E-mail: scott.geyer@uspto.gov

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SBG 2/10/04

SBG
February 10, 2004

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2/11/4